Borup wins Electrochemical Society Award

January 26, 2015

Rod Borup of Materials Synthesis and Integrated Devices (MPA-11) has won the 2015 Research Award presented annually by the Energy Technology Division of the Electrochemical Society (ECS). The society recognized him for “his seminal contributions to the fundamental understanding of the durability of polymer electrolyte fuel cells.”

Borup’s achievements

Borup and his team are focused on improving the polymer electrolyte membrane (PEM) fuel cell, which converts hydrogen to electricity for power, but emits only water. Their work is important for hydrogen-powered fuel cell electric vehicles.

“Over the past decade Rod has led a team of researchers at national labs, industry, and universities that has made significant contributions to several aspects of PEM fuel cell durability, including platinum electrocatalyst degradation and carbon corrosion in the

electrode and gas diffusion layers," said ECS Energy Technology Division chairman Adam Weber. "Through his current leadership of the Los Alamos National Laboratory fuel cell program, Rod continues to guide research efforts to increase the durability and decrease the cost of PEM fuel cells to enable commercialization."

Borup received a doctorate in chemical engineering from the University of Washington. He joined Los Alamos in 1994 as a postdoctoral researcher in the Laboratory's former Engineering Sciences and Applications Division, which at that time had one of the nation's first research groups studying fuel cell components. Through his involvement with the Los Alamos/GM Joint Development Center, Borup collaborated with industry to develop the electrochemical engine — a PEM fuel cell system powered by methanol converted on demand to a hydrogen-rich gas. In 1996 he joined General Motors as a senior project engineer at its new fuel cell R&D center in New York. Since returning to the Laboratory in 1999, he has been a scientist in the fuel cell team, collaborating with automakers to reduce the cost and increase the performance of PEM fuel cell stack components. He also serves as the Laboratory's program manager for DOE's Fuel Cell Technologies Office.

Borup received a 2005 DOE Hydrogen Program R&D Award in recognition of outstanding achievements in PEM fuel cell durability and the U.S. Drive 2012 Tech Team Award for the Fuel Cell Technical Team. He holds 13 U.S. patents, and has authored more than 100 papers related to fuel cell technology. Borup is a member of the DOE/U.S. Drive Fuel Cell Technical Team and co-chair of the DOE Fuel Cell Technologies Office Durability Working Group.

About the Electrochemical Society

The Electrochemical Society is a U.S.-based professional association with more than 9,000 members in more than 75 countries. Its mission is to advance theory and practice at the forefront of electrochemical and solid-state science and technology, and allied subjects. The Research Award includes a monetary prize and membership in the Society's Energy Technology Division. It will be presented at the ECS spring 2015 meeting in Chicago.